

## ABSTRACT OF THE DISCLOSURE

A wheel-and-tire apparatus having at least two coaxially mounted tires is disclosed in which  
5 the diameters of one or more of the tires in the apparatus may be adjusted to select the tire or tires  
which are to be in contact with the road surface. The apparatus facilitates the selective use of tires  
having different performance characteristics, as may be desired or preferred to suit particular road  
conditions or vehicle operating conditions. The diameters of particular tires are increased or  
decreased as required to achieve a desired configuration of relative tire diameters, using tire diameter  
10 adjustment means such as one or more pneumatic pumps mounted in association with the apparatus.  
Sensors monitor selected operational parameters of the vehicle and transmit corresponding signals  
to a computer which selects an optimal tire configuration to suit the particular combination of  
operational parameters received from the sensors. The computer then transmits a corresponding  
signal instructing the tire diameter adjustment means to adjust the diameter of one or more tires in  
15 the apparatus as required to achieve the selected optimal tire configuration.